P047-e

Hips abnormalities in children with cerebral palsy

A. Haj Salah (Dr)[a], M. Rekik (Dr)[a], M. Sghir (Dr)[a], S. Jemni (Dr)[b], W. Said (Dr)[a], W. Kessomtini (Dr)[a,*]
[a] *CHU Tahar Sfar-Mahdia, Mahdia, Tunisia*
[b] *CHU Sahloul*
[*] *Corresponding author.*
E-mail address: kwassia@yahoo.fr (W. Kessomtini)

Introduction Cerebral palsy is considered a neurological disorder caused by a non-progressive brain injury. Hips abnormalities in child with cerebral palsy are the consequence of the neurological disorder in growth period.
Objectives To identify Hip abnormalities in children with cerebral palsy and to determine orthopedic and preventives treatment modalities through a review of the literature and our experience in the rehabilitation unit in Mahdia.
Methods and Results We have conducted a prospective study during the last three years on children with cerebral palsy referred to our unit. The assessment was based on clinical examination (a full neurological examination, a complete articular balance), gait analysis, functional assessment and radiographic analysis (spine X-Ray: front and side view, anteroposterior pelvic radiograph: without and with hips in maximum abduction). A rehabilitation protocol was implemented and adjusted according to clinical assessment.
Thirty children with cerebral palsy enrolled with an average age of 4 years and 6 months. 60% were quadriplegic, 35% were paraplegics. Orthopedic abnormalities of the hip found were flexion deformity in 80% of cases, defect in hip abduction in 66% of cases, subluxation in 43% of cases, dislocation in 2 cases and dysplasia in 62% of cases. Spinal deformities associated in 60% of cases. All our children had benefited from rehabilitation and suitable orthesis. Dislocations were referred to the surgeon [1].
Discussion Vicious attitudes are the result of muscular imbalance caused by the neurological disorder. The postural collapse and poor positioning aggravate deformities. Abnormalities most frequently encountered are the flexion deformity, defect in hip abduction, defect in external rotation, subluxation and dislocation. Rehabilitation helps to reduce muscle imbalance, bad posture and postural collapse in children with cerebral palsy.
Conclusion Hips deformities are important concerns for the clinician. Rehabilitation holds a special place in prevention and management.
Keywords Cerebral palsy; Hips; Abnormalities
Disclosure of interest The authors have not supplied their declaration of conflict of interest.
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Neuro-orthopedic deformities managment: A multidisciplinary approach

F. Pradalier [*], C. Anquetil (Dr), F. Coroian (Dr), B. Coulet (Prof), I. Laffont (Prof)
CHU Lapeyronie, Montpellier, France
[*] *Corresponding author.*
E-mail address: fannypradalier@icloud.com (F. Pradalier)

Introduction Dystonic and dyskinetic syndromes produce musculotendinous retractions, subluxations and hip or shoulder dislocations. Most of the time, deep brain stimulation and pallidotomy cannot be used in secondary syndromes as they are in primitive forms. Drug treatments have frequent side effects. Very often these treatments are inadequate to prevent musculoskeletal deformities, which have an impact on pain, nursing, positioning and quality of life.
Observation We followed a 45-year-old man with a spastic tetraparesia and a generalised dystonic and dyskinetic syndrome residual of a cerebral anoxia due to a heart arrest. His initial treatment was oral baclofen, anticholinergics and secondary intratechal baclofen. His symptoms increased progressively: pain, communication and nursing difficulties, mispositioning, elbow crease mycosis, as a consequence of musculoskeletal deformities. The patient had triple flexion of his upper limbs, antero inferior irreducible left shoulder dislocation, bilateral flessum of the knees. Multidisciplinary management has been provided, initially surgical then medical. Surgery included rotator cuff desinsertion of the left shoulder, needle percutaneous tenotomies of left elbow flexors, biceps femoris and semitendinus and plaster cast immobilisation. The medical treatment included twice-daily bolus of intratechal baclofen with dose-increase, botulinum toxin injection (left semimembranosus, right shoulder retractor muscles), phenolyc neurolysis (bilateral ansa pectoralis, left musculocutaneous nerve), physiotherapy and occupational therapy.
The pain relief allowed a progressive morphinic doses decrease. Both armchair and bed positioning have been improved. Dyskinetic movements disappeared and verbal communication became easier.
Discussion Neuro-orthopedic deformities management in patients with dystonia and dyskinesia may allow a decrease of dyskinetic movements and improve their comfort. It consists of multidisciplinary medicosurgical approach with tenotomies in association with oral or intratechal baclofen, botulinum toxin, chemical neurolysis and rehabilitation.
Keywords Neuro-orthopedy; Dystonic and dyskinetic syndrome; Tenotomy
Disclosure of interest The authors have not supplied their declaration of conflict of interest.

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Contribution of surgical selective hyponeurotisation in the treatment of lower limbs spasticity

E. Toulgui (Dr), K. Maaref (Dr)[*], I. Ernez (Dr), S. Jemni (Dr), F. Khachnaoui (Dr), N. Mahdhi (Dr)
CHU Sahloul, Sousse, Tunisia
[*] *Corresponding author.*
Adresse e-mail : maaref_khaled@yahoo.fr (K. Maaref)

Objective Surgical selective hyponeurotisation (SSH) is indicated in localized and excessive limbs spasticity. This study aims to evaluate the functional outcome of SSH on lower limbs.
Methods Between 2011 and 2014, 26 SSH were performed in patients with localized excessive spasticity on lower limbs. Patients were selected by a careful multidisciplinary clinical evaluation including a local nerve block with an anesthetic agent. Three steps of assessment have been established; spasticity, function and pain. This evaluation was done preoperatively and postoperatively on the first day and on the third postoperative month.
Results The average age of patients was 38,7 ± 16,5 years. The sex-ratio was 2.2. The main causes of spasticity were stroke, cerebral palsy and traumatic brain injury. We noted a statistically significant decrease in spasticity assessed by the Gracies Clinical Assesment [1]. The improvement was observed for all parameters, specifically for the active mobility involving antagonists (XVA) which contributed to statistically significant improve of the walking function at lower limbs. The pain also decreased in all patients.

Discussion Surgical selective hyponeurotisation followed by a good rehabilitation is an effective treatment for patients with excessive localized spasticity on lower limbs. It allows a decrease of spasticity and pain, and a functional improvement. This technique followed by a good rehabilitation could be a good alternative to Botulinum Toxin offering effective results with an acceptable durability and an affordable cost.

Keywords Neurectomy; Muscle Spasticity; Rehabilitation; Lower extremity

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

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P050-e

Fibularis lungus, historia brevis

F. Pellas (Dr)*, C. Gagnard (Dr)
CHU Caremeau, Nimes, France
**Corresponding author.*
E-mail address: frederic.pellas@chuimes.fr (F. Pellas)

Fibularis lungus (FL) action and participation in gait disorders is often underestimated, although first description of the impact on gait of a FL "spasm" dates from 1872 [1].

Case history Thirty years aged men, with multiple sclerosis spastic tetraparesis, cerebellar hypotonia and ataxia. Functional exam: completely independent in everyday life activities, with difficulties to put on shoes, needing one croutch outside. Physical exam: paresthesia, thermoalgesic and proprioceptive hypoesthesia in both lower legs (LL), proximal weakness prevailing on the left, dystonia of extensor hallucis longus (Hallucis erectus) and clonus of soleus and gastrocnemius of both legs.

Gait analysis FL is responsible for a left-hand side pattern prevailing on the left-hand side, associating "footdrop" and sole's eversion during swinging phase, valgus-valgus instability of the heel during stance and heel medial-lateral oscillations when standing tiptoe; [pre-injection video].

Treatement's history First, all three calf muscles of both legs have been injected (total of 300 UI Botox) but patient developed a botulism-like syndrome with; he had no profit of second injection with 25 units in both gastrocnemius and TP of each leg, rather it caused drastic weakening of propulsion. Treatment aims: improve control of inversion-eversion couple during terminal stance, without weakening propulsion strength or heel's medio-lateral stability during tiptoe stance.

Treatment Injection of only left leg trigger muscles (FL and it's antagonists: TP, Extensor Hallucis Longus) with 50 UI each (total = 150)

Post injection exam bilateral decrease of medial-lateral heel & leg-body oscillationsduring tiptoe stance, better leg shortenig during swing & no personal sensation of propulsion.

Conclusion muscles actions must always be considered taking into account both proximal and distal fixed points. In case of proximal fixed point, LPL plantar flexes foot and reverse sole; when fixed point is distal, FL steadies leg (and body) upon the foot in frontal plane and draws leg's lateral side outwards.

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

Reference

[1] Duchenne (de Boulogne) G-B. Impotence fonctionnelle et spasme fonctionnel du long péronier latéral. Arch Gen Med 1872;6(20.) [Paris: P. Asselin (Ed)].

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Evaluation of the results of botulinum toxin typeA for the treatment of the spastic equinus feet in cerebral palsy among children over two years of age

H. Belabbassi (Dr)*, F.B. Aidja (Dr)*, R. Allouti (Dr), H. Kaced (Prof)
CHU Djillali Bounaama, Douéra, Alger, Algeria
**Corresponding author.*
E-mail address: aidjabadiaa@gmail.com (F. B. Aidja)

Background Botulinum toxin type A (BTA) belongs to a therapeutic arsenal of the spastic equinus feet (SEF) in cerebral palsy (CP) and in association with splints posture, walking orthoses and kinesitherapy.

Aim To evaluate the results of BTA on SEF in CP using modified Ashworth scale (MAS) and the Silfverskiold test (ST) among children over 2 years old.

Patients and methods It's a retrospective, descriptive study, performed from January 2013 to January 2014 at the PMR department of Douera's hospital university.

We've included children with SEF who've never been treated before.

We've excluded children who've been injected with BTA in muscle groups other than the Triceps surae.

The protocol consisted of BTA injections, followed by the rehabilitation program a month later.

Assessments were done using MAS and ST before and after the total injections.

Results Twenty-one children were examined (13 girls and 8 boys; mean ages of 7.5 ± 3.58 years).

SEF was static in 19% and dynamic in 38.1% of cases. It was static and dynamic in the remaining 42.9%.

The soleus was injected in 9.5% of cases, gastrocnemius in 19% of cases and triceps surae in 71.4%. The average number of injections was 2.90 ± 1.18.

Improvement was observed in both MAS and ST comparing before and after treatments by BTA. These results are statistically significant with P value of < 0.0001 (mean of Ashworth scale2.76 ± 0.54 vs 1.33 ± 0.57).

Discussion-conclusion There was a decrease in triceps surae spasticity and stabilization or improvement of tarsal ankle angle. These measures only evaluate one aspect of SEF.

Keywords Spastic equinus feet; Botulinum toxin type A; Cerebral palsy; Modified Ashworth scale; Silfverskiold test

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

Further readings

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